POLICIES AND INSTITUTIONS IN RWANDA'S COFFEE SECTOR

By

Andrew Gerard

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CHAPTER 2: RELATIONAL CONTRACTS AND VALUE CHAIN GOVERNANCE STRUCTURES: COFFEE EXPORTER APPROACHES TO OVERCOMING TRANSACTION COSTS

2.1 Introduction

Export companies are essential actors in global value chains for commodities such as coffee. They purchase goods in producing countries, and facilitate exports to importers or buyers in consuming countries (Baglioni, 2015; Ponte, 2002). In some cases they can be thought of as "lead firms" that govern global value chains, insofar as they are vertically integrated with multinational corporations (MNCs) (Daviron & Ponte, 2005; Ponte, Kelling, Jespersen, & Kruijssen, 2014). They are important actors even when their role is constrained to buying and then selling commodities to global traders or importers; as middlemen they can extract rents and influence the institutional context in which they work. In the case of coffee, despite their important functions, exporters have received relatively little attention, with more studies focusing on production (Bolwig, Gibbon, & Jones, 2009; Ibanez & Blackman, 2016; Mujawamariya, D'Haese, & Speelman, 2013; Ruben & Fort, 2012). The lack of research on coffee exporters is surprising, because particularly in East Africa they are perceived as influential in national coffee sectors (Clay et al., 2018; Daviron & Ponte, 2005).

The concept of global value chains (GVCs) is influential in studies of economic development and can help in understanding exporters (The World Bank, 2019). GVC research focuses on "how global industries are organized by examining the structure and dynamics of different actors involved in a given industry" (Gereffi & Fernandez-Stark, 2016, p. 6). GVC research focuses in part on how lead firms and other actors engage in upgrading value chains. Upgrading is a concept that "refers to the constellation of ways in which firms can enhance their competitiveness through investments in productivity, specialization, and knowledge-intensity" (Pipkin & Fuentes, 2017, p. 536).

Exporters play a particularly important role in countries where value chains are in the process of upgrading, such as Rwandan coffee (Behuria, 2018; Daviron & Gibbon, 2002). As a matter of economics and policy, Rwandan coffee has moved from being primarily commodity-quality to increasingly becoming "specialty" coffee (Behuria, 2018; Clay et al., 2018). Specialty coffee is high-quality coffee, generally of the *arabica* variety, which sells for higher prices than commodity-grade coffee (Clay et al., 2018). In the GVC literature, this can be seen as a "product" upgrade in that the quality of the product improves (Bamber, Guinn, & Gereffi, 2014). Coffee is one of Rwanda's most important agricultural exports, grown by over 350,000 farming families (Clay et al., 2018). Smallholder farmers grow coffee on their farms, and then either home-process "parchment"[1] or sell cherries to coffee washing stations (CWSs) (Clay et al., 2018). CWSs are mills that purchase coffee cherries from numerous farmers, process them, and then sell them to exporters. Over the past two decades, Rwanda's government has focused on upgrading the coffee sector through quality improvements, and encourages farmers to sell to CWSs rather than home-processing (Behuria, 2018; Clay et al., 2018). Despite substantial private and donor investment, Rwanda's coffee production has stagnated and farmer prices are some of the lowest in East Africa (Clay et al., 2018). While the percent of coffee sold as specialty has increased, benefits do not seem to be accruing to Rwandan farmers, CWSs, or exporters (Clay et al., 2018; National Agricultural Export Development Board, 2016a).

1 Parchment is coffee which has had the cherry skin and pulp removed, and which has been dried and is prepared for hulling at a dry mill (Daviron & Ponte, 2005).

Prior to coffee sector liberalization in the early 2000s, Rwandan coffee was exported by a government-owned firm (Behuria, 2018; Boudreaux, 2011). However, since liberalization, local investors, foreign traders, and farmer cooperatives have moved into exporting coffee (Behuria, 2018). Many coffee sector stakeholders perceive exporters to have outsized influence on coffee policy and some have expressed concern about an industry takeover by large exporters (Behuria, 2018; Clay et al., 2018). Indeed, several companies—primarily MNCs but including large Rwandan exporters—have consolidated exports, and six firms export 70% of Rwandan coffee (Behuria, 2018).

By consolidating the sector and squeezing out Rwandan exporters, foreign exporters may capture the benefits of upgrading coffee quality (Vicol, Neilson, Hartatri, & Cooper, 2018). Vertically integrating from CWSs in Rwanda to roasters in Europe or North America allows MNCs can capture a greater share of value addition even while exporting an upgraded product. MNC domination of the sector could challenge the notion that upgrading is indeed benefiting Rwanda's coffee sector. A 2017 review of GVC upgrading suggested that "treadmilling"—upgrades followed by "backsliding, decay, and obsolescence"—were often associated with "high buyer dependence, low local institutional capacity… outsourcing of knowledge-intensive activities, and adoption of easily imitable upgrades" (Pipkin & Fuentes, p. 537). An important question is whether this is happening in Rwanda.

In regulating the coffee sector, Rwanda's government balances protecting Rwandan businesses and farmers with creating a conducive environment for foreign investment. Indeed, Rwandan economic and agricultural policies are welcoming for foreign direct investment and this is a priority for economic growth (Rwanda Ministry of Agriculture and Animal Resources, 2013;

Rwanda Ministry of Finance, 2013). In addition, the agency that regulates coffee—the National Agricultural Export Development Board (NAEB), an agency under Rwanda's Ministry of Agriculture and Animal Resources—is also tasked with guiding foreign investment into export crops (National Agricultural Export Development Board, 2019).

This paper considers the role and diversity of exporters in Rwanda's coffee sector by exploring the barriers faced by exporters—Rwandan and foreign—and their relationship-based and value chain governance strategies for overcoming these challenges. In doing so, we analyze the extent to which Rwandan exporters face pressures from MNC competitors, and describe the pressure MNCs perceive from government. The following two questions guide this study: (1) What challenges do Rwandan private, cooperative-owned, and foreign coffee exporters face? Specifically, how do these challenges differ among these different types of exporters? (2) How do different types of exporters address these challenges? In particular, how do their approaches to addressing these challenges differ?

In answering these questions, this paper contributes to literature in three ways. First, as noted, there has been little research conducted on coffee exporters, and studies that do reference exporters rarely go into detail on their structures or behavior in value chains (Behuria, 2018; Clay et al., 2018; Ponte, 2002). Second, this paper contributes to the body of evidence on how contracting and GVC governance structures are used to overcome transaction costs in developing countries (Fafchamps, 2004; Gereffi, Humphrey, & Sturgeon, 2005; Key & Runsten, 1999; Morjaria & Macchiavello, 2015). Finally, it serves as a case study of a government and donor-supported attempt to upgrade a value chain using foreign investment that may end up backfiring if MNCs drive out local exporters and capture value addition (Pipkin & Fuentes, 2017).

2.2 Literature Review

2.2.1 Transaction costs and value chain organization

Agricultural, manufacturing, and trade-based value chains in Sub-Saharan Africa often face institutional challenges related to contract enforcement and high transaction costs (Fafchamps, 2004). These challenges, which complicate trading, have been well-described within the agricultural economics literature, often using a New Institutional Economics (NIE) lens (Schmid, 2004). High costs of information (Fafchamps & Minten, 1999; Key & Runsten, 1999; Maertens, Colen, & Swinnen, 2011) and difficulties for contract enforcement (Banerjee & Duflo, 2000; Gerard, Lopez, Clay, & Ortega, 2020; Morjaria & Macchiavello, 2015) are particularly challenging for exporters in GVC for commodities such coffee.

In coffee, high information costs relate to the quality and provenance of coffee and trustworthiness of partners. Coffee quality is a high information cost good because coffee cannot be cup-tested until it is processed; thus, it is difficult to know the quality of cherries being purchased at a CWS. The risk of a trading partner reneging on a contract or holding up the trading partner involves both high information costs and high enforcement costs. Hold up refers to breaking an agreement in a trading relationship and "holding up" either payment or the product that has been paid for (Cungu, Gow, Swinnen, & Vranken, 2008). It occurs when one actor chooses not to follow an agreed-upon structure for trade, with the result that the other actor is exposed to "ex post costs and risks related to their sunk investments in relationship-specific assets." (Cungu et al., 2008, p. 77). It is difficult to know whether your trading partner is trustworthy and—if they are not—it is costly to take them to court.

Relational contracts can assist in overcoming both high information costs and high enforcement costs. Relational contracts involve using relationships, reputation, and reciprocity to contract when agreements are costly to enforce (Banerjee & Duflo, 2000; Fafchamps & Minten, 1999; Morjaria & Macchiavello, 2015). In addition, long-term relationships between trading partners can be an important way to share complex information (Gereffi et al., 2005). Even in contexts with high enforcement costs, it may be possible to enforce contracts or ensure supply of produce through legal action, monopsony buying systems, or vertical integration (Gereffi et al., 2005; Key & Runsten, 1999; Maertens et al., 2011; Sukhtankar, 2016).

In discussing GVC governance structures, Gereffi, Humphrey, and Sturgeon describe two ways that value chains can organize to control quality and reduce transaction costs: hierarchy (vertical integration) and captive value chains (2005). In combination with relational contracts, these are helpful concepts for understanding exporter behavior. Hierarchy is "characterized by vertical integration" and its governance involves "managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates" (Gereffi et al., 2005, p. 84). In captive value chains, "small suppliers are transactionally dependent on much larger buyers" and "face significant switching costs." (Gereffi et al., 2005, p. 84). While Gereffi et al. do describe "relational" value chain governance, this is a distinct concept from the relational contracts described in NIE. As Ajwang suggests, few papers have connected concepts from GVC and NIE, despite GVC and NIE using similar concepts and language (2019). This paper exploits these complementarities to describe exporter behavior.

2.2.2 Studies on exporters

While substantial research has been conducted on GVC governance and contracting in developing countries, there is less research on coffee exporters as value chain actors. One reason for this may be that exporters' roles have changed over time. In a 1997 paper discussing the global coffee value chain, Talbot described the processing and exporting stages of coffee production as being locally-owned while import and roasting were often controlled by MNCs (Talbot). In 2005, Daviron and Ponte suggested that international traders globally were beginning to vertically integrate down into processing and exports.

In 2002, Ponte described a gap in coffee research related to "the identity, market share and organization of actors involved in commodity markets and their contractual relationships upstream (towards producers), downstream (towards consumers) and sideways (with providers of inputs and services)…" (p. 250). This was written in the context of an analysis of coffee exporters in Kenya, Tanzania, and Uganda. However, it remains true that little research has focused on coffee exporters and their relationships toward processors or farmers, toward importers, or—in the case of Rwanda—with government. Baffes (2006) studied local exporters in Uganda's *robusta* coffee sector, and the consolidation of that sector as smaller, less sophisticated exporters failed because of price fluctuations. However, Uganda's coffee sector did not exhibit as high a level of MNC activity as Rwanda, and *robusta* coffee is less quality-differentiated than specialty *arabica* coffee (Baffes, 2006; Daviron & Ponte, 2005). While many recent papers reference or generally describe coffee exporters, few analyze them specifically (Bro & Clay, 2017; Gelaw, Speelman, & van Huylenbroeck, 2017; Giuliani, Ciravegna, Vezzulli, & Kilian, 2017; Vicol et al., 2018).

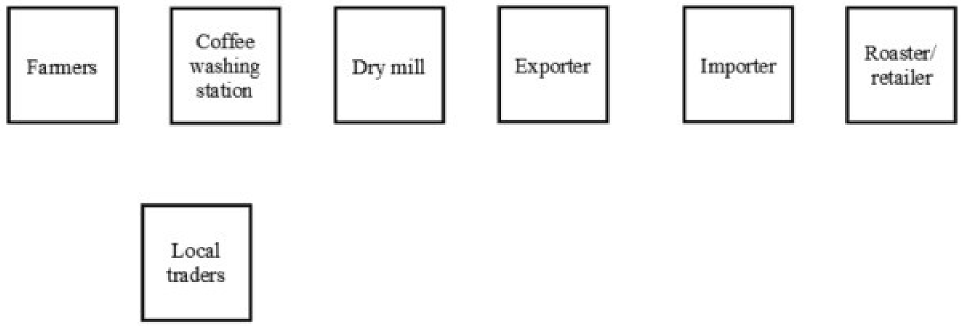
A more specific gap has to do with the role of exporters within Rwanda's coffee sector. Exporters have been described has having an outsized influence on regulators, and specifically to have advocated for low farmer prices (Clay et al., 2018). However, aside from work by Behuria (2018), little analysis has focused specifically on their structure and performance.

2.3 Background on Rwanda coffee sector

2.3.1 Exporters

In Rwanda, exporters purchase coffee from CWSs and sell to importers or roasters in consuming countries, or to other exporters in Rwanda who in turn sell to foreign buyers. Under different organizational structures exporters may own CWSs and may in turn be owned by MNCs with import arms. While many CWSs are owned by exporters, others are owned by local companies or cooperatives and sell coffee to exporters. If an exporter owns the CWS, they purchase fresh coffee cherry from farmers or from coffee traders (though this has become less prevalent, because of the zoning policy described in the next section). If they do not own a CWS, they purchase parchment coffee from CWSs. After wet milling at a CWS, coffee is hulled at a dry mill, which renders the "green" coffee that is sold to international buyers for roasting in consuming countries (Daviron & Ponte, 2005). Upon hulling the coffee, exporters manage export paperwork and ship green coffee to the port at Mombasa, Kenya, where the coffee is shipped to its destination for roasting. See Figure 1 for a simplified visualization of the Rwanda specialty coffee value chain.

Figure 1: Simplified Rwanda specialty coffee value chain



Sources: The authors; Clay et al., 2018; Macchiavello & Morjaria, 2015; Behuria, 2018

2.3.2 Key policies in Rwanda's coffee sector

Understanding the challenges and opportunities facing exporters in Rwanda's coffee sector requires understanding two important policies: the zoning policy and farmgate price.

The 2016 zoning policy aims to improve relationships between CWSs and farmers through a monopsony system in which farmers must sell to specific CWSs, and CWSs must purchase coffee from those farmers (Gerard et al., 2017; National Agricultural Export Development Board, 2016b). The policy was developed in response to what government and researchers saw as a breakdown in relational contracts between farmers and CWSs (Macchiavello & Morjaria, 2015). Additional goals for the policy were to improve coffee traceability, protect CWSs that may fail financially because of competition, and reduce the influence of middlemen (National Agricultural Export Development Board, 2016b).

With the advent of specialty coffee in Rwanda in the early 2000s, there were often positive, mutually beneficial relational contracts between CWSs and farmers (Macchiavello & Morjaria, 2015). Macchiavello and Morjaria describe an interlinked system, in which CWSs provided pre-financing and inputs to farmers, who sold them cherry with a recognition that they would receive part of their payment up front, and part as a "second payment" after the CWS had sold coffee

(2015). However, due to increasing competition between CWSs, relational contracts broke down. Some farmers would take pre-financing or other services and then side-sell cherry to traders or other CWSs, and CWSs began refusing to provide pre-financing or second payments (Macchiavello & Morjaria, 2015). This in turn incentivized farmers to sell their cherry quickly traders or competing CWSs for cash rather than waiting for a second payment that might not appear.

One of the zoning policy's goals is to improve relationships between farmers and CWSs (National Agricultural Export Development Board, 2016b). While CWSs are not required to provide farmers with pre-financing or second payments, because they cannot purchase coffee from outside of their zone and no longer face the threat of side-selling, Rwanda's government hopes that they will provide services to farmers (Africa Great Lakes Region Coffee Support Program, 2017). Because many exporters own CWSs and rely on geographically dispersed farmers for cherry, this policy constrains them. Under zoning, they cannot legally access more cherry than is within their zones' boundaries.

Another relevant policy is the farmgate price. Rwanda's government has put in place a set price per kilo of cherry purchased by CWSs, commonly known as the "farmgate price" (Clay, et al., 2018). The farmgate price is calculated based on the estimated farmer cost of production in Rwanda, and global coffee prices (Ntirenganya, 2019). Districts can set local farmgate prices which are higher than the national farmgate price, if coffee in the District is in sufficient demand that they can afford this. With the advent of zoning, the government encourages CWSs to pay exactly the District-level farmgate price for a first payment, with the option of paying a second payment, so as to dissuade CWSs from competing for cherry and "breaking" the zones (Africa Great Lakes Region Coffee Support Program, 2017).

The role of exporters in the value chain is contentious in part because of their purported unequitable influence on farmgate prices—keeping them lower than farmers would like (Clay et al., 2018). if the farmer voice was well represented at the negotiatintg table. supposedly While farmgate prices now are set based on a formula, in the past exporters and farmer groups negotiated with NAEB over prices. Farmgate prices have fluctuated substantially: from 150 RWF ($0.20 USD) per kilo of cherry in 2016, to 249 RWF ($0.31 USD) in 2017, to 267 RWF ($0.31 USD) in 2018 when most exporter interviews were conducted, to 190 RWF ($0.21 USD) in 2019 (Ntirenganya, 2019; The New Times, 2017; XE, 2020)[2].

2.4 Methods

2.4.1 Data collection

During fieldwork for this paper in 2018 and 2019, we conducted 29 semi-structured interviews. In sampling for these interviews, we had two considerations: including the most influential exporters and having a diversity of exporters in terms of size, location, and ownership type. We asked five individuals knowledgeable about the Rwandan coffee sector to identify the exporters they believed were most important in terms of size or influence in the sector. Based on exporter reputation, we identified eight exporters to include in analysis. In addition, we sampled 22 exporters from the 69 registered exporters using a random number generator for a full initial sample of 30 exporters. If an exporter was not able to be contacted or refused to be interviewed, we substituted another exporter in its category (see below) using a random number generator. Of

2 Exchange rates as of January 1 in each year in question. The Rwandan franc has weakened against the US dollar in recent years.

the 69 registered exporters in Rwanda, we ultimately sampled a total of 34 (49.3%) and interviewed 25 (36.2%).

Interviewed exporters fall into three categories: Rwandan private exporters, Rwandan cooperative-owned exporters, and foreign exporters. Initially, we used a larger number of categories for Rwandan private companies based on whether they owned CWSs (hypothesized to be an indicator of size) and where they were located. However, in analysis it became clear that combining these sub-categories was a better approach because there was little differentiation between categories of Rwandan exporters compared to other categories.

Representatives from 24 export companies and one non-governmental organization (NGO) with knowledge of the coffee sector were interviewed in 2018. Exporter representatives interviewed were generally the exporters' owner or manager. In the case of MNCs, these were generally the in-country manager. In 2019, we conducted three additional interviews with stakeholders aimed at triangulating findings from the initial interviews, and one interview with a cooperative-owned exporter. Stakeholders interviewed included a representative of an international coffee buyer and representatives of two NGOs. These individuals were chosen because of their interactions with exporters and ability to support or challenge findings from exporter interviews.

The first author interviewed 21 of 29 interviewees in English. During the process, we worked closely with a Rwandan research assistant who was trained to conduct interviews in Kinyarwanda. She conducted eight interviews. Of English interviews, fifteen were recorded with the authorization of the respondent and then transcribed. Six interviewees preferred not to be recorded. Most semi-structures interviews were conducted in Kigali, Rwanda's capital. Two interviews were conducted outside of Kigali, at rural CWSs. In addition, two interviews were conducted over Skype from the U.S.

2.4.2 Data analysis

We analyzed data during and after the fieldwork. After the fieldwork, for the interviews done in Kinyarwanda, our research assistant transcribed and translated them into English; for the interviews in English the first author transcribed them. We then started a data condensation stage (Miles, Huberman, & Saldana, 2014). We created a codebook using the NIE and GVC literatures, and emergent themes from the research. Key categories of analysis included challenges faced by exporters, challenges faced by the coffee sector, relationships with government, relationships with the exporter association, relationships with farmers, and contracting approaches, among others. We coded the full transcripts of interviews using NVivo. We created memos for each interview, and across codes which allowed for analysis across and within interviews. We do not present counts of respondents, instead presenting the rough scope of agreement or disagreement on topics (Patton, 2002).

Table 1 presents an overview of organizations interviewed. In addition to exporters, there are categories for stakeholders interviewed.

Table 1: Organizations represented in interviews

	2018 Interview	2019 Interview	Total
Exporter interviews			
Private Rwandan	15	0	15
Cooperative-owned	4	1	5
Private foreign	5	0	5
Subtotal exporters	*24*	*0*	*25*
Additional interviews for triangulation			
Stakeholder (NGO, buyer, etc.)	1	3	4
Total:	25	4	29

In presenting results, we include illustrative quotes from interviewees. We use a code for the exporters to retain confidentiality. Respondents numbered P 1-15 are the 15 Rwandan private exporters, C 1-5 are the five cooperative-owned exporters, and F 1-5 are the five foreign exporters.

2.5 Results

Results are organized into (1) differences between private Rwandan, cooperative-owned, and foreign exporters, followed by (2) analysis of challenges faced by each, and finally (3) their approaches to solving these challenges.

Exporters have different structures, levels of vertical integration, and sizes, which influences the challenges they face and how they confront these challenges. The main structural aspects that we investigated were the ownership of the exporter, how much coffee they export, and vertical integration: whether they own CWSs and/or dry mills and whether they are connected to a foreign importer. See table 2 for an overview of types of exporters interviewed.

Table 2: Organization of private Rwandan, cooperative-owned, and foreign exporters

	Ownership structure	**Average # containers sold (approx. 37,500 lbs. each)**	**CWS**	**Dry mill**	**Foreign importer**
Private Rwandan (15 total)	9 sole proprietorship; 5 partnership; 1 holding company.	Avg.: 23 containers. Range: 0-100+. One exporter did not divulge.	9 own CWSs. Most own between 1-4 CWSs.	5 own a dry mill.	2 vertically integrated with importer (neither are MNCs).
Cooperative (5 total)	Owned by members.	Avg.: 15 containers. Range: 3-40+. One exporter did not divulge.	All own CWSs.	1 owns a dry mills. One exporter did not divulge.	0 integrated with foreign importers.
Foreign private (5 total)	3 MNCs; 2 sole proprietorship.	Avg.: 109 containers. Range: 0-200+.	3 own CWSs.	3 own a dry mill.	4 vertically integrated with importer (3 are MNCs).

2.5.1 Challenges faced by exporters

Rwandan private exporters

Rwandan private exporters discussed the challenges they face and challenges across the Rwandan coffee sector. Accessing financing is a primary challenge**,** noted by several exporters. Exporters need financing to operate CWSs, pay farmers for cherry, and purchase processed coffee from CWSs. Exporters noted that banks see loaning money to exporters as risky and hedge against this risk by requiring substantial collateral. Even after getting approval for a loan, there are delays in receiving financing and delays in knowing whether financing will be available.

Several exporters suggested that despite the zoning policy aimed at restricting competition, buyer competition raises cherry prices. Competition for cherry is not allowed under the zoning policy, however our own research suggests that at the time of this research, zoning had only partially been implemented and had not be implemented in the same way across regions (Gerard, Lopez, Mason, & Bizoza, 2020). Some exporters also expressed concern at the threat of foreign exporters to the market, suggesting they have substantial power and drive cherry prices up through competition at the CWS level. A minority of respondents said that MNCs have an easier time finding buyers because of their trading operations outside of Rwanda.

A minority also noted hold up, reneging, or fraud buyers as a challenge. For example, one informant (P4) said: "[It is] difficult to identify who is the real buyer because there are some ones who pretend to be buyers yet are thieves; they come and take our coffee neglecting that it is for farmers." Indeed, high information costs abound for private Rwandan exporters, and respondents regularly mentioned the importance of having information on or trusting groups they work with. Several Rwandan private exporters suggested that costs of information are high for coffee quality because quality cannot be gauged until coffee has been processed and roasted. Some exporters suggested that owning CWSs can mitigate these problems because they can implement quality control procedures from the time the farmer bring the coffee to the CWS; others suggest the importance of visiting farms/mills of suppliers to better understand their production. Additional problems noted include high cherry prices and low global prices.

When asked about the most important challenges in the sector, Rwandan exporters noted coffee quality and low farmer investment. Some of the same challenges that exporters noted for themselves are also challenges they perceive for the sector, such as getting financing, delays in financing, finding buyers, low global prices, and exporter competition.

Rwandan cooperative-owned exporters

Challenges facing Rwandan cooperative-owned exporters were similar to those faced by private Rwandan exporters. For example, financing was also the primary challenge identified by representatives of cooperative-owned exporters. Specifically, representatives noted difficulty in getting loans and delays in receiving loan money. One cooperative representative suggested that some cooperatives receive pre-financing from MNCs, and then are unable to pay back their loans and have their CWSs seized.

Several cooperatives suggested that competition raises cherry prices, but some also said that zoning has limited competition. Cooperatives and private exporters were similar in their concerns about competition. However, a difference is that cooperatives also talked about competition with MNC exporters on the export market, not solely competition between CWSs for cherry. Cooperatives were also more explicit about their concern with consolidation happening in the export sector. Some were negative about MNCs, suggesting that MNCs could sell on the international market for lower prices and some were concerned about their level of vertical integration.

A minority of cooperative representatives suggested that finding new buyers is a challenge. One said this is particularly difficult given high prices for Rwandan coffee on the international market compared to low global prices. While less of a concern than for private Rwandan exporters, some suggested difficulties in being able to trust buyers.

When asked about the biggest challenges facing the coffee sector, cooperatives noted similar issues for the sector that they did for their own businesses. They added that the lack of inputs for Rwandan farmers, specifically mulch, hampered farmer investment.

Foreign exporters

Foreign exporters differed substantially from Rwandan exporters in the challenges they faced. While foreign exporters noted that competition exists and that it was not eliminated by zoning, they did not discuss it as a serious challenge to business. Rather, the most common challenge discussed by foreign exporters was what they perceived as a high farmgate price. Representatives of all foreign companies were negative about high farmgate prices, citing comparably low global prices. Some said they would reduce purchases of Rwandan coffee because of the high price, and aside from one high-end exporter, they said that they were losing money at current prices. A majority said that NAEB does not host meetings to discuss the price—something NAEB used to do prior to announcing the farmgate price, with some exporters frustrated that they no longer have a say in price setting.

Foreign exporters were mixed on whether a government-set farmgate price was necessary at all. Some said that the farmgate price was unnecessary because of competition, however one suggested that it was only necessary in parts of the country with few CWSs. Just one said it is necessary because the government encourages high quality coffee, and high farmgate prices encourage CWSs to select higher grade coffee.

Relative to other respondents, foreign exporters claimed that zoning negatively impacted business. Most said that there is high competition and side-selling, implying that they believe zoning has been unsuccessful. One (F1) suggested that zoning harmed farmers and would be unsuccessful:

> "I think competition is the best thing for the farmers. The zones were [designed] to try and eliminate it, but in a district like Nyamasheke where there's 60 washing stations in a small area, zoning will never, ever succeed. It just won't happen."

Some respondents said that farmers who previously supplied them had been assigned to another zone. Only one person said something positive about the policy; they liked zoning "in theory" but did not know how it was working.

In addition to criticizing specific policies, foreign exporters made negative statements about NAEB itself, with a majority describing contentious communication that they had with NAEB about policies, in particular the farmgate price. One respondent (F3) illustrated these difficulties:

> And the relationship with NAEB is becoming more and more difficult. The distance between us and them is becoming bigger. So in the past, how the regulation and decisions were made, sometimes they were inviting us to discuss. They would listen to our ideas and decide. Now they don't. There is no regular communication... It's like we don't understand each other. So that's how it is. And so what we do is just follow the regulation. If you can survive, fine. If you fall down, you are finished.

It is unclear to what extent this negativity was because of differences of opinions between foreign versus Rwandan exporters, and the extent to which foreigners may feel at liberty to criticize the government relative to Rwandans.

Though not as serious a challenge as high farmgate prices or zoning, representatives of most foreign exporters complained about farmers or CWSs reneging on contracts. In some cases, exporters were confused as to why farmers agreed to a deal and then did something else. One of these exporters (F4) said:

> We used to do contracts for 5 years minimum. But we find [that] they don't follow the rules. We do yearly now. It is hard for us, or for the cooperative it is hard to

> follow the contract. We can invest and then someone else will come and they will change their mind. There is no loyalty, even if you invest time and education.

Much of the concern about suppliers reneging on agreements came from the smallest foreign exporters. One larger exporter said that they initially had problems with side-selling, but quickly resolved them by taking CWSs to court. As in buyers reneging on contracts (noted by Rwandan exporters), suppliers reneging may be an example of high enforcement costs. The smallest foreign exporters had the biggest problem with reneging and are in the worst position to use the court system to enforce contracts due to limited capital and organizational capacity.

Finally, some respondents mentioned difficulties in getting good rates in financing. However, they do not seem to have the same challenges as Rwandan firms in terms of not accessing loans or having delayed loans.

As is the case with Rwandan exporters, when asked about the primary challenges facing the sector, foreign exporters mostly noted the same problems they identified for their businesses. However, they were also concerned about management competence in the value chain, specifically with Rwandan companies that they believe have weak professional standards.

Stakeholder perspectives on challenges faced by exporters

Interviewed stakeholders commented on several challenges identified by Rwandan (private and cooperative-owned) and foreign exporters. In terms of challenges facing Rwandan exporters, stakeholders described structural differences between MNCs and Rwandan exporters. Because of their vertical integration, MNCs have better knowledge of global markets, an ability to choose which coffees are in blends (and reduce purchases of Rwandan coffee if prices are high), and better financing lines. While foreign exporters have an advantage in competing for cherry, all stakeholders believed that competition for cherry at the CWS level has decreased because of zoning.

Some stakeholders were concerned about MNC consolidation of the sector. One said that due to consolidation, the only exporters remaining in Rwanda were MNCs, two large local firms, and "a couple of guys hustling." Others were less concerned, one because vertical integration and consolidation are "normal" parts of business, and another because they believed consolidation may be slowing. One stakeholder suggested that while MNCs are consolidating parts of the sector, Rwandan exporters are too fragmented, lack economies of scale, and should merge to compete with MNCs.

Some stakeholders suggested that a problem facing Rwandan exporters is that they do not understand MNCs. For example, one said that contracts cooperative exporters receive from MNCs were fair, but that cooperatives did not understand the contracts and believed they were being exploited.

Stakeholders also discussed challenges identified by foreign exporters, agreeing that many foreign exporters have contentious relationships with NAEB. While stakeholders were more amenable to high farmgate prices than foreign exporters, some stakeholders said that the process for setting the farmgate price is opaque. Stakeholders were more positive about zoning than foreign companies because they believed it reduces competition for cherry. An area of agreement between stakeholders and foreign exporters was on weak management skills by local value chain actors. Several stakeholders suggested that this was an important problem, focusing on quality control and transport issues.

2.5.2 Approaches to addressing challenges

There are two primary ways that exporters seek to solve the challenges they face: (1) through affiliation with government and non-governmental organizations; and (2) through value chain governance and contracting approaches.

Support from government and business associations

As discussed, NAEB is the government regulator serving the coffee sector. The Coffee Exporters and Processors Association of Rwanda (CEPAR) is a business association that serves exporters. We might expect that, as an engine of collective action for diverse local and international exporters, exporters would rely on CEPAR to represent their interests and NAEB would represent the interests of the government, farmers, and the broader economy. However, this is not the dynamic informants identified.

Rwandan exporters (private and cooperative-owned) look to NAEB rather than CEPAR for support. Rwandan private exporters were overwhelmingly positive about NAEB, with a large majority making directly positive statements. They also highlighted services provided by NAEB such as improving coffee quality, helping with export documents, advising on which farmers to buy from, helping with cupping, and planting coffee trees. One exporter (P2) said: "They do help a lot. They help with quality. They give us experts. They store our coffees. [There are] many ways to interact with them. And they do a beautiful job." A small minority of Rwandan exporters had mild criticisms of NAEB, such as that they are not always able to help with cupping coffee, that they had reduced farmer extension support, and that they are not effectively marketing Rwandan coffee. Most cooperative representatives made positive statements about NAEB; none made negative statements.

In theory, CEPAR represents all export companies. However, some exporters suggested that they primarily represent large exporters. Both Rwandan and foreign exporters agree that CEPAR is ineffective in advocating for exporters' interests. Some Rwandan private exporters expressed positive sentiments about CEPAR, but a larger number were more negative, with some saying that CEPAR was ineffective at advocacy. One exporter (P9) had a nuanced view:

> CEPAR is a good idea. It was a good idea. But over the time it seems…Ok, it is helping, but it's not giving much, enough to its members. That's my own opinion. And I think they are good...but it requires thinking strategically and having some real ideas of kind of services to provide.

Contracting and value chain governance approaches to overcome challenges

This section discusses contracting and value chain governance approaches that exporters use or benefit to overcome challenges in contracting with suppliers: Relational contracts, vertical integration, contracts and pre-financing, and the zoning policy.

Relational contracts: Rwandan private and cooperative-owned exporters rely on trust and reputation in contracting, which lowers information costs. Evidence of use of relational contracts begins with how Rwandan exporters talked about relationships with farmers relative to how foreign exporters discussed this.

Rwandan exporters suggested relational or ethical reasons for providing services (e.g., training, transportation, etc.), with several saying they provided services because it is essentially the right thing to do. Others said that providing services motivates farmers. Some made statements about their general affection for farmers or noted the importance of communication with farmers. As a Rwandan exporter (P13) said:

> It's a family business. We want everyone involved to benefit. We want to give back what is fair. We know that farmers are not always getting the best price. We target a high-end specialty market. The buyers know the premiums we are paying.

Like private Rwandan exporters, cooperatives emphasized the importance of relationships with farmers, with several focusing on the importance of building a feeling of community for cooperative members. For Rwandan exporters, relationships with suppliers are important both to avoid suppliers reneging on agreements and also as a quality control mechanism. Local exporters face high information costs around coffee quality, so anything they can do to access information helps reduce these costs.

While foreign exporters also provide services, their motivations seem to be more transactional. While one MNC talked about the benefits of building long-term relationships, another implied that services provided are primarily aimed at preventing side-selling. Another foreign exporter (F5) said that "honestly I don't screw them [farmers] at all," but that ultimately exporters must protect their businesses. A third foreign exporter suggested that Rwandan CWSs and cooperatives cannot be trusted for cultural reasons and consistently renege on agreements.

Vertical integration: Foreign exporters are more vertically integrated than Rwandan exporters, with four foreign exporters vertically integrated from CWS up to the importer level and three owned by MNCs. To control quality and prices along the value chain, MNCs purchase CWSs and dry mills. Several foreign exporters said that a benefit of vertical integration is reduced risk, with some saying that benefits of vertical integration include quality control and better price information. One (F1) was blunt that vertical integration was the only way they could continue making money in the context of zoning and high farmgate prices:

> I know that NAEB [is] not encouraged by the idea of these international businesses continuing to buy washing stations and invest. They would rather see Rwandan washing station owners, as would I. That's where I think they don't believe what I'm saying… I would love to have no washing stations or sell the ones we have but…the regulatory framework is actually encouraging the international businesses to invest in washing stations. The very thing that we'd love to see less of.

Captive via formal contracts and pre-financing: An additional way that foreign exporters control quality and reduce risk is through a "captive" value chain governance approach via contracts and pre-financing (Gereffi et al., 2005). All foreign companies used contracts with CWSs and—unlike other exporters—most had taken suppliers to court for breaking contracts. Contracts are expensive to enforce and many Rwandan exporters may not be able to afford going to court, but some foreign exporters can.

Contracts, however, are not always effective in convincing suppliers to comply with agreements, and exporters said that some farmers and CWSs side-sold despite contracts. One noted that CWSs and farmers would take pre-financing, sell the coffee to one of their competitors, and then pay them back with the profits they made selling to their competitors. A foreign exporter (F1) with experience in Rwandan courts said:

> We had a lot of trouble in the first few years of operation, but the advice we got from other people in the industry was just let your contract, the institution and the legal trade markers there do its work… so we took a couple people to court who side-sold coffee who we warned and I guess word travels fast that we were serious and then so we haven't had that problem.

Punishments for reneging on contracts when pre-financing is involved can be severe. CWSs can go out of business or be rented to another company until they pay off their loan.

While they tend to rely on strong relationships with farmers, some Rwandan exporters use contracts with farmers, CWSs, or buyers. Several Rwandan private exporters that use contracts said that they reduce risk. Some said that contracting with farmers gets them better coffee and others said that it helps with traceability. Some Rwandan exporters also contract with buyers, and a minority said that contracting with buyers helps them get loans, because they can take contracts to the bank as evidence of a confirmed buyer. Rwandan exporters generally do not pre-finance

CWSs and do not often take farmers, CWSs, or buyers to court for reneging on agreements. While some cooperatives also saw contracts as reducing risk, this is less of a theme, perhaps because cooperatives are owned by their members, who are also their suppliers.

Captive via zoning: The zoning policy protects some Rwandan exporters from competition with foreign exporters, who can raise cherry prices or pay up-front when Rwandan exporters cannot. Since the zoning policy was implemented recently, the monopsony structure associated with it is still imperfect. Exporters claimed that side-selling still exists and that farmers do not face penalties for doing it. However, it is more difficult for farmers to side-sell without traders frequently visiting their farms. Zoning is positive for Rwandan private exporters that own CWSs, because it ensures that they will have cherry to purchase. It also may help exporters who do not own CWSs but purchase from specific CWSs, if the volume of coffee available is more predictable.

Several Rwandan private exporters were positive about zoning, saying that competition had decreased. A small number were mildly critical. Summarizing the benefits of zoning for local exporters, one respondent (P11) said:

> For us, for local farmers, for local companies, we are doing the zoning process, the zoning is protecting us, it has stabilized the competition, no high competition, as it did before, so we are appreciating the zones. The importance [is] to work properly with farmers, if you work properly with farmers, the zoning is there, if you don't work with those properly, they [farmers] will disappear to the competitors…

While there was less convergence for cooperatives, some were positive about zoning. Some said that CWSs are respecting zones and not raising prices and that zoning reduced competition. While a minority of cooperatives lost members because of zoning, this was not a major topic of discussion.

Table 3 summarizes contracting and value chain governance strategies employed by different types of exporters.

Table 3: Contracting and value chain governance approaches for coffee exporters

	Rwandan private	Cooperative	Foreign
Relational contracts	Core approach in relation to farmers/ CWSs; service provision, trust, monitoring for quality.	Core approach in relation to farmers/cooperative-owned CWSs; service provision, trust.	Not a core approach.
Vertical integration	Limited vertical integration; some CWS and dry mill ownership to control quality, costs.	Limited vertical integration; CWS ownership, some dry mill ownership to control quality, costs. Cooperative is owned by farmers, so arguably integrated from farm level.	Core approach to controlling quantity, quality, cost, and marketing. Can be integrated from CWS to foreign importers via global trading companies. Some use global traders for marketing and financial hedging.
Captive via pre-financing and contracts	Not a core approach.	Not a core approach.	Core approach in relation to CWSs via pre-financing and legal action in case of non-payment.
Captive via zoning	Core approach between CWSs and farmers via the zoning policy.	Core approach between CWSs and farmers via the zoning policy.	Generally, does not benefit foreign exporters because it limits their ability to purchase cherry.

Stakeholder perspectives on exporter approaches to overcoming challenges

Stakeholders discussed the role of NAEB and CEPAR in supporting exporters to overcome challenges, agreeing that Rwandan exporters tend to approach NAEB for support rather than CEPAR. Some also noted that CEPAR generally represents large exporters. One stakeholder, who was generally positive about CEPAR, said that CEPAR does not have enough resources or a sufficiently broad mandate to be effective.

Stakeholders did not speak in detail about contracting structures; however, when asked whether farmers preferred to sell to Rwandan or foreign-owned CWSs, some stakeholders responded that farmers generally sell to whoever has money up-front or pays better. This tends to be foreign exporters, but that is not always the case. Adding nuance to the idea of Rwandan companies using relational contracts, one stakeholder said that while Rwandan exporters may want to help farmers, they cannot provide high quality services because of limited resources.

2.6 Discussion and conclusions

This paper contributes to the scant literature on coffee exporters by describing their structures and the barriers they face. We find that Rwandan exporters and cooperatives faced numerous challenges, including (1) high competition for cherry because of incomplete implementation of the zoning policy; (2) difficulty in accessing financing because of perceptions of risk by banks, (3) hold up and fraud by suppliers, and in the case of private companies (4) high cherry prices, because of the farmgate price and competition for cherry. Both Rwandan private and cooperative-owned exporters were concerned about the effect of low global prices. By comparison, foreign companies largely pointed to government policies (e.g., farmgate price and zoning) as constraints, while also suggesting risks in dealing with local companies. While both Rwandan and foreign companies referenced high cherry prices as a problem, foreign exporters framed this as a problem of high farmgate prices whereas private Rwandan exporters expressed it as a combination of high cherry prices and low global prices.

This paper also describes contracting and value chain governance approaches to overcome challenges. In doing so, it pulls both from global value chain studies and New Institutional Economics concepts, an approach not commonly used (Ajwang, 2019). We find that Rwandan private and cooperative-owned exporters have unique approaches to deal with transaction costs such as high information costs: relational contracts with farmers and CWSs, relationship with government, and use of the zoning policy to protect against competition for coffee cherry. Their reliance on relational contracts supports previous research on local firms in manufacturing and trading, including Rwandan CWSs (Fafchamps, 2004; Fafchamps & Minten, 1999; Macchiavello & Morjaria, 2015). Their reliance on relational contracts may in part be caused by their lack of resources that would allow them to vertically integrate, pre-finance, or litigate against trading partners who renege on agreements. Particularly when dealing with numerous smallholder farmers, using relational contracts involves building social capital over the long term, which takes substantial time and effort. Where they have difficulty is in dealing with foreign firms, which can hold them up or renege on agreements without fear of relational censure.

Foreign exporters are structurally different from local exporters and have different approaches to solving challenges. They are more vertically integrated—often owning CWSs and dry mills, have access to foreign markets, and may have less difficulty accessing financing. In addition, because of their resources, many pre-finance suppliers, thereby locking them into contracts. How foreign exporters deal with delays in payment and side-selling differs from Rwandan exporters—they are more likely to use the courts to settle disputes rather than working through relational contracts. Unlike Rwandan exporters, MNC exporters have another advantage: they can simply buy more coffee from other countries if the costs of exporting from Rwanda become too great. Their ability to diversify coffee buying gives them options that local exporters do not have.

Finally, while this study does not provide direct evidence on whether Rwanda's coffee sector is on a "treadmill," it does provide evidence that some common elements expected in a treadmill situation are observable. There is increasing consolidation by exporters in terms of volume of export and purchasing CWSs. While exporters and stakeholders suggested that NAEB has high organizational capacity, they said that CEPAR does not and some suggested that local value chain actors do not either. While some cooperative-owned exporters were involved in marketing coffee externally—a knowledge-intensive activity—local firms were less involved in this, with some selling to foreign exporters or a single foreign buyer. Low national coffee production, farm level productivity, and farmer incomes also suggest that despite increased sophistication of largely foreign-owned processing approaches, benefits of any "upgrading" process are not widespread (Clay et al., 2018). Finally, multiple foreign exporters noted that they can easily replace Rwandan coffee with substitutes from other countries, so it was difficult to justify high cherry prices. Thus, each item on Pipkin and Fuentes' list of indicators of value chain treadmilling—"high buyer dependence, low local institutional capacity… outsourcing of knowledge-intensive activities, and adoption of easily imitable upgrades"— is present in Rwanda's coffee sector (2017, p. 537).

Consolidation of the sector may allow MNCs to hold up farmers, CWSs, and ultimately the government in order to receive favorable prices and policies. Currently, Rwanda's government is not limiting MNCs' ability to vertically integrate, but is limiting competition for coffee cherry between CWSs and the exporters that own them through zoning. This, and high farmgate prices, makes it more profitable for MNCs to own CWSs because MNCs can access larger and more predictable volumes of coffee and through vertical integration are better able control their costs at each stage of processing.

The government can take steps to strengthen Rwandan exporters or increase their bargaining power and, in turn, the share of income from coffee staying in Rwanda without directly limiting the ability of foreign exporters to invest. One approach would be to more forcefully designate CEPAR as an advocate for all export companies. For example, NAEB could require a certain proportion of CEPAR's board to be Rwandan-owned companies and make CEPAR the sole negotiating mouthpiece of exporters in Rwanda. Another approach would be to provide capacity building support to Rwandan exporters, for example in building up their capacity to market coffee to foreign buyers. If the government is concerned that benefits of value chain upgrading are accruing to MNCs rather than local firms, they could encourage knowledge-sharing or technology-sharing contracts between foreign exporters and local farmers, CWSs, and dry mills (Reardon, Barrett, Berdegué, & Swinnen, 2009).

In addition, implementation of policies that affect all exporters could help Rwandan exporters. For example, improving implementation of zoning to further reduce competition between CWSs for cherry would ameliorate a problem facing local exporters. Providing financial management capacity building for exporters may improve Rwandan exporters' ability to receive and effectively manage loans. Reducing the costs of legal action could lessen the incidence of fraud/reneging (Macchiavello & Morjaria, 2015). Finally, much of what is driving financial challenges for all exporters is the difference between local farmgate prices and global prices. Reducing farmgate prices is not a helpful option; farmers are barely paid above the cost of production and paying them less will reduce farmer investment (Clay et al., 2018). However, the government could put in place price stabilization mechanisms to protect the industry during periods of particularly low global prices.

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CHAPTER 5: CONCLUSIONS

5.1 Scholarly and practical contribution of this research

This dissertation discusses institutional and policy issues constraining Rwanda's coffee sector and the people who work in the sector. In addition—in the case of zoning and pesticide distribution—it describes policies that seems to be effectively improving the sector, though with varying levels of implementation and with some negative externalities. This dissertation contributes to literature about institutional challenges in developing country cash crop value chains, including high costs of information, high costs of contract enforcement, and the potential for hold up by buyers. This dissertation provides insight on different components of Rwanda's coffee sector: from the relationship between different types of exporters, to a policy that affects CWSs and farmers in different ways, to female household heads who face economic, institutional, and cultural challenges. It specifically provides new information on approaches exporters take to overcome transaction costs, the efficacy of local monopsony zoning systems in cash crops, the differential impact of input distribution policies on female household heads, and how female household heads view the problems they face.

This dissertation also contributes methodologically via use of mixed methods approaches. Data collection involved a farmer survey, qualitative key informant interviews, problem trees, and focus groups. Analysis involved qualitative content analysis, development of mental models from problem trees and focus groups, and quasi-experimental quantitative analysis triangulated with key informant interviews. Research papers often involved multiple, iterative stages in which a learning from one stage would inform research design for the subsequent stage. In planning research, I worked closely with Rwandan colleagues in honing research questions and developing fieldwork approaches and coordinated research with government leaders and industry stakeholders.

While the limited use of quasi-experimental data and Rwanda's often-idiosyncratic context means that these findings have limited external validity, it is important that they are meaningful within Rwanda and Africa's Great Lakes Region. Because of the desire to produce research that is useful to Rwandan stakeholders, it is important to use whatever methods are available to ask policy-relevant questions. However, in joining an existing body of literature, these findings bolster, challenge, or contribute nuance to other findings from developing country cash crop research.

In attempting to balance directly focusing on identified needs in Rwanda's coffee sector and writing relevant scholarly work, I chose qualitative methods to try to answer some practical questions. Post-positivist use of qualitative methods is not common, but is critical for understanding dynamics of problems that cannot easily be studied through survey methods or experiments (Chung, 2000; Poteete, Janssen, & Ostrom, 2010). To increase the internal validity of findings, in both chapters 2 and 4 I used random sampling for qualitative data collective. It is important to provide policymakers and coffee sector stakeholders with confidence that qualitative data is representative in reflecting the views of the sub-population of interest, whether that sub-population is female household heads who sell to a specific CWS or exporters across the sector.

In fact, some research subjects recognized the importance of randomized sampling. A woman in Southern Province asked how her workshop group had been selected, since the women did not know each other and were of diverse ages and varying degrees of health. When told how we randomly selected them, they clapped. One woman said, “If you had let the cooperative pick who you spoke to, they would have called young and educated farmers, so we appreciate that you picked us.”

5.2 Cross cutting findings and implications of research for Rwandan stakeholders

Three cross cutting findings and implications merit discussion. These include findings on the strength of local policy implementation, the importance of farmer cooperatives, and the need for government support and regulation.

5.2.1 Strength of local policy implementation

Rwanda has developed a reputation for strong governance and policy implementation, and critiques of policy implementation in this dissertation should not be construed as denying that. The policies Rwanda is implementing, such as a national input distribution system, reform of historical land policies, and radically changing how farmers sell their coffee, are bold and difficult to achieve. However, this dissertation does provide examples of national policies that could be better implemented at the local level.

Zoning is discussed in both chapters 2 and 3. Views differ on how well zoning was implemented. Some exporters believed that side selling remained rampant after zoning was implemented. However, analysis of survey data and interviews with CWS managers painted a more positive picture. In both chapters, there is an acknowledgement that the policy is not perfectly implemented and that it harmed some people, largely cooperative members. Harming cooperatives in turn harms female household heads who, as chapter 4 demonstrates, can benefit substantially from cooperative membership.

It is ethically problematic to take away freedom of sale channel choice for farmers and CWSs without their consent. However, given the choice to do so, it is important that it is replaced with something that is clearly better than the status quo. Zoning is not clearly better for all farmers, but it has the potential to be better. Making zoning a clearly beneficial policy will require ensuring that all farmers know about the policy, that cooperative members can still benefit from membership, and that CWSs provide services to farmers in a consistent way.

Like zoning, pesticide and fertilizer distribution is an example of a policy that is largely effective, but has varying levels of implementation at the local level. As noted, input distribution has improved substantially since 2015; this policy is in a broad sense a success. However, a lack of information, corruption, and a lack of money to pay laborers keep female household heads from receiving pesticide at the same rate that male household heads receive it. Cooperatives have made it easier for their members to use pesticide by having professional pesticide sprayers visit their plantations, however for female household heads who are not cooperative members hiring sprayers remains a challenge.

Though less a focus of the dissertation than zoning or input distribution, land reforms have a similar dynamic in that they are bold national policies that are implemented in different ways locally. National policies developed in the past two decades seek to improve land tenure security for women. However, according to focus groups and previous research, village leaders who serve a decision-making role often discriminate against women and adjudicate against them (Jones-Casey, Dick, & Bizoza, 2014).

5.2.2 Farmer cooperatives

All dissertation chapters relate to farmer cooperatives in some way. In chapter 2, some cooperatives owned CWSs and had marketing structures that allowed them to make money. Chapter 3 uncovers a threat to cooperatives, which was that they could be split up and their members could lose access to benefits of membership through zoning. In chapter 4, cooperatives were able to provide farmers a collective action mechanism, provide helpful services such as pesticide spraying, and protect vulnerable members such as female household heads. These papers point to the continued need for government and donors to support cooperatives by government as a means to improve wellbeing of farmers and the functioning of the coffee sector. An important caveat to findings on cooperatives is that in chapters 2 and 4 the cooperatives included were largely known to be strong and well-managed. Given the potential diversity of management capacity in Rwandan cooperatives, there is some risk that these papers overstate the case that cooperatives are helpful to farmers and are competent in terms of organizing exports.

5.2.3 Need for coffee-sector investment and regulation

Previous research has suggested high positive externalities of coffee production, including environmental, economic, and social benefits (Clay & Bizoza, 2018). Given these positive externalities and the economic inefficiencies in the sector discussed in this dissertation, I would contend that the sector needs both investment and creative, careful regulation. The focus on non-coffee crops in recent agricultural policies and loans from multilateral finance institutions may be important from a food security perspective, but Rwanda has a strong comparative advantage in coffee economically and in terms of potential resilience to climate change (Clay & Bizoza, 2018; The World Bank, 2020). The coffee sector requires continued investment, but given pervasive market inefficiencies and transaction costs it also requires regulation that creates a profitable and equitable playing field for farmers, CWSs, and exporters.

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